REMARKS

This amendment is responsive to the Office Action dated April 9, 2003.

With regard to the specification and drawing objections, the following clarifications are made:

The coaxial magnetic field generator 130 has been updated in the drawing figure 4, which now matches the specification paragraph starting on page 20 line 23.

The uniform flux field 132 presently shown in figures 6a, 7 and 8 is added to drawing figure 4, and a reference to 132 is clarified as appearing in figure 4 in the amended specification paragraph starting on page 20 line 23.

Examiner has objected that in the detail description of the drawing figures, all labeled features need to be explicitly described in the specification description of each figure, and if the labeled features appear in more than one drawing figure, they be referenced to the figures in which they appear. Examiner cites the following reference numerals, for which applicant responds below:

''electron gun 230'' is shown in figure 4, and properly described in the specification paragraph describing figure 4 starting on page 20 line 23 (previously disclosed in presently amended paragraph of 01/04/2003). The specification paragraph starting on page 23 line 19 associated with figure 6a where the gun is described but not shown is presently amended accordingly. The electron gun 230 also appears in figure 9, described in the amended paragraph starting on page 26 line 14 (previously disclosed in presently amended paragraph). It is also shown on figure 10 and is described in the amended paragraph starting on page 26 line 17.

''axis 152'' is shown in figure 4 and properly described in the specification paragraph describing figure 4 starting on page 20 line 23 (previously disclosed but presently amended). Axis 152 is also shown in figure 4-1 and is presently amended into the specification paragraph starting on page 20 line 23. Axis 152 is also shown in section view figure 6b described on the paragraph starting on page 24 line 16 (previously amended 01/04/2003). Axis 152 also appears in figure 6c and the presently amended specification paragraph of page 25 line 7 now includes a reference to beam axis 152.

''beam tunnel 156'' appear in figures 4-1 and is presently amended into the associated specification starting on page 20 line 23. Beam tunnel 156 also appears in figures

4a-4c and is properly described in the same associated specification. Beam tunnel 156 appears in figure 9 and is presently amended into the specification starting on page 26 line 14.

''Shell 140'' is shown in figure 4 and described in associated specification paragraph starting on page 19 line 13 (previously amended 1/4/2003). Shell 140 is also shown in figure 6a and described in associated specification paragraph starting on page 23 line 19 (previously disclosed, but presently amended paragraph). Shell 140 is also shown in figure 6b and described in associated specification paragraph starting on page 24 line 16 (amended 1/4/2003). Shell 140 is disclosed in figures 7 and 8, and the paragraph on page 25 line 7 amended 1-4-2003 indicated it is the same structure as found and described in figure 6a. References to shell 140 in the specification for figure 9 starting on page 26 line 14 are now amended to include a reference to the shell 140 of figure 4. References to shell 140 in the specification for figure 10 are now amended to refer to figure 4 on the paragraph starting on page 26 line 17.

''semicircular extension, or cutouts, 178'' appear in figure 6a and specification paragraph on page 23 line 19 (amended 1-3-2003), figures 7 and 8 and associated specification paragraph on page 25 line 17 (amended 1/4/2003). References to cutouts 178 and iron 170 in the

specification referring to figure 10 on page 26 line 17 are presently amended to describe these structures.

''aperture 210'' is found in figure 6a, described in specification paragraph starting on page 23 line 19 (previously disclosed and presently amended), and figure 6b, described in specification paragraph starting on page 24 line 16 (amended 1/4/2003), and figure 6c where it is presently amended into page 25 line 7. Aperture 210 is also shown on figures 7 and 8 and described in associated specification paragraph starting on page 25 line 17 (previously amended 1/4/2003), and on figure 10, where it is described on page 26 line 17 (presently amended).

With regard to the drawing objection for missing reference label 106n of figure 4, applicant points out the suffix ''n'' corresponds to the last occurrence in an arbitrary range, as shown by the original specification page 21 line 6:

--Each electron gun 230a..n is arranged circularly around the central axis Z and produces a beamlet which initially focuses to a minimum diameter 106a..n--

For the electron guns and structures shown in figures 4a-4c, the last beamlet for the illustrated example of 8 beamlets is n=8, for which a cross section produces a view which includes beamlet 106a and 106e, as shown in figure 4. There

is no beamlet 106n for the illustrated case n=8, and the possible combinations of beamlets to illustrate in figure 4 depend on the angle of the slice through the beamlets, and would be 106a & 106e (as shown), or continuing the slice rotatation through figures 4a-4c: 106b & 106f, or 106c & 106g, or 106c & 106h. There is not a ''106n'' to show in this view. Reconsideration is requested.

With regard to the drawing objection for figure 4a needing to show reference label 174, the remarks of the amendment of 1/4/2003 point out that figure 4a is a section view through A-A of figure 4. Resonant cavity 174 is present in section views B-B of figure 4 (figure 4b), and views C-C of figure 4 (figure 4c), but resonant cavity 174 is <u>not</u> present in section A-A, as the section A-A is beyond the extent of cavity 174. Structure 174 is properly not shown in section A-A, as it is not present in that particular view.

With regard to the drawing objection of figure 6a to include cathode 102 and beam tunnel 106, the specification for figure 6a has been presently amended beginning on page 23 line 19 to indicate that these structures are not shown. Figure 6a shows --the magnetic circuit of figure 4-- (pg 16 line 20-21), and cathode 102 and beam tunnel 106 are part of the electron gun shown in figure 4, and in detail in figure

5. References to figure 4 for cathode 102 and beam tunnel 106 are amended into the specification for figure 6a.

With regard to the rejection of claims 25-26 for the use of the RF device as an amplifier and oscillator needing to be present in the ''Detailed description of the invention'', applicant points out the following sentence found on page 27 line 7-9 of the original application: ''The present RF device may operate as an amplifier, or as an oscillator, or in any way a single beam prior art device may operate''. Applicant is unable to state more clearly in the detailed description of the specification that the present device may be used as an amplifier or oscillator. Reconsideration is requested.

With regard to the 35 USC 112 rejection of claim 8, this claim has been rewritten to overcome the redundant recitation of an electron gun. Reconsideration is requested.

With regard to the 35 USC 112 rejection of claims 9-14, 21-24, applicant has added --one or more-- between ▮ said▮ and ''field corrector'', as suggested by examiner.

With regard to the 35 USC 112 rejection of claim 15 for indefiniteness, claim 15 has been amended to remove the

reference to claims 11 and 12. Removed references to claim 11 appear as re-presented new claims 35 and 36 which remove the indefiniteness. Reconsideration is requested.

With regard to the 35 USC 112 rejection of claim 21, ''main'' has been amended to --central-- as suggested by examiner, and a ''first radius'' and ''second radius'' are defined including a relative size relationship.

With regard to the 35 USC 112 rejection of claim 27 for indefiniteness, the word ''optionally'' has been removed, and new claim 37 is written which removes the words ''optionally, additional magnetic field correctors''. Reconsideration is requrested.

With regard to the 35 USC 103 rejection of claim 8, applicant has amended this claim to include a magnetic field corrector which is --located near said cathode--, therein distinguishing the present field corrector from the correctors of Mourier which provides a field correction variously: using a coil which operates over and covers the entire extent of the beam (Mourier figure 3), two coils located at the far ends of the beam tunnels (Mourier figure 4), a single coil located in the middle of the beam tunnel extent (Mourier figure 5). Also described are a ferromagnet located in the middle of the beam extent (Mourier figure 6), a combination of figures 4 and 5 (Mourier figure 7), and a

combination of figures 5 and 6 (Mourier figure 8). Mourier does not teach a magnetic field corrector which is located near the cathodes, nor influences the magnetic field principally near the cathodes. Amended claim 8 is distinguishable from Mourier, as Mourier operates either at the center of the beam tunnel extent, over the entire extent, or at the ends of the extent. There is no teaching in Mourier of one or more field correctors which operate near the cathode - they are either over the full extent of the beam tunnel, or located at the center, or located at both ends, or a combination of these. Reconsideration of claim 8 is requested.

With regard to the 35 USC rejection of claims 12, 14, 15, 18, 20, 25, and 26, these are claims dependant on claim 8, which is now allowable.

Claims 27-32 have been amended as described above to overcome the 35 USC 112 rejections.

Applicant also notes the following additional changes to the drawings and specification numbering:

Prior art figure 3 iron enclosure numeral 140 is changed to numeral 300 in the figure and specification starting on page 19 line 1. The amended figure 3 and specification distinguishes the prior art enclosure 300 from iron enclosure 140 of the present invention as shown in

figures 4, 6a, 6b, 6c, 7, 8, 10. Field generator 130 is changed to numeral 301 in the figure and specification paragraph starting on page 19 line 1 to distinguish from the magnetic field generator 130 of amended figure 4.

Unreferenced numeral 104 is removed from figure 3.

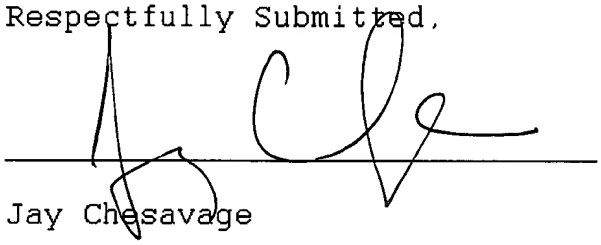
Figure 4 field generator is changed from 131 to 130 to match corresponding figures 6a, 7, and 8, and is amended to show magnetic field 132 feature and numeral.

Figure 4-1 beam tunnel "156a,b.." is amended to "156a,b,...n" to match the existing reference "152a,b,...n"

Figure 5 heater is changed from 106 (used previously to indicate beam profiles of figures 4 and 5) to new numeral 197.

With this amendment, this application is in condition for allowance. Examiner is advised that agent Chesavage may be reached by telephone at 650-619-5270, or via e-mail at patents@chesavage.com

Respectfully Submitted,



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